

Sub. B3 } cylindrical body; and one or more shelves disposed on a surface of the substantially
cylindrical body.

a 4 46(amended). A kit for an implant system comprising:

composite material; and

one or more cylinders designed to retain a structural framework material,
composite material, or ceramic material, wherein the cylinders comprise a substantially
cylindrical body; and one or more shelves disposed on a surface of the substantially
cylindrical body.

REMARKS

Claims 1, 12, and 43 – 46 have been amended to more particularly define and distinctly claim the instant invention. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **VERSION WITH MARKINGS TO SHOW CHANGES MADE**. In regard to the objections to the drawings, Applicants respectfully submit that the drawings will be amended upon receipt of the Notice of Allowance. In view of the foregoing amendments and following remarks, reconsideration of the application is respectfully requested.

Claims 1 – 4, 12, 16, 17, 19, 26, 27, 29, 30, and 32 were rejected under 35 U.S.C. 102(b) as being anticipated by Carlsson et al. (U.S. Patent No. 5,125,841). The Examiner states that Carlsson '841 discloses an implant system comprising a cylinder 1 having vertical 5 and horizontal 6 shelves thereon. The Examiner contends that the cylinder is used with impression material to build a framework. Claims 43 – 48 were rejected under 35 U.S.C. 102(b) as being clearly anticipated by Branemark (U.S. Patent No. 4,708,654). Moreover, claims 5, 6, 7 – 11, 13 – 15, 18, 20 – 25, 28, and 31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Carlsson '841. The Examiner contends that although Carlsson '841 does not disclose the use of fiber reinforced impression material with the cylinders, to use a fiber reinforced material would have been obvious to one skilled in the art wishing to increase the strength of the impression material, and thus the framework. For the reasons set forth below, the rejections are respectfully traversed.

The claimed invention is directed to a cylinder for an implant system wherein the cylinder is designed to retain a structural framework material, composite material, or ceramic material. The cylinder has a substantially cylindrical body and includes one or more shelves disposed on a surface of the substantially cylindrical body. The cylinder may include a cantilever extending from the cylindrical body if it is to be used at the end of a row of cylinders for an implant system. Moreover, the cylinder may include a series of nodules, holes or beads disposed on a surface of the cylindrical body. The cylinders of the invention are an integral component of the actual implant system.

Carlsson '841 is directed to "impression tops" used in the manufacture of a working plaster model for an implant system. More specifically, the "impression tops" act as a transfer device used for recording the orientation of a dental implant or "spacer element" (commonly known as an abutment) which orientation is needed to fabricate a working plaster model for an implant case. The "impression tops" are used to align analogs or the "spacer elements" in the working model that correspond to the locations of the implants in the mouth. As the claims in Carlsson '841 state, the invention is directed to a device for transferring the direction and position of a dental implant or its extension member to a working plaster model.

In preparing an implant system, the first step involves inserting implant screws into the jawbone of the patient's mouth. After a period of healing time, such as, about 3 to 6 months, the prostheses may be prepared for adaptation to the implant screws in the mouth. This involves taking an impression of the patient's jaw and fabricating a plaster model of the patient's jaw. Carlsson '841 is directed to this step of the process. In order to prepare a prosthesis which will correspond to the location of the implant screws positioned in the patient's mouth, "impression tops" (more commonly known as transfer devices) are inserted into the screws or "spacer elements" located in the patient's mouth. Thereafter, an impression of the patient's jaw is taken. The (transfer devices) impression tops (which extend into the impression material) of Carlson '841 are picked up in the impression. Analog "spacer elements" are placed in the new empty "impression tops." Thereafter, a plaster working model is prepared from the impression carrying the impression tops (transfer device) with analog "spacer elements" therein. A plaster working model with the properly positioned analog "spacer elements" is thus obtained.

At this point, "impression tops" are no longer necessary. The analog spacer elements remain in the working model, which is then used to prepare the prosthesis which will be inserted into the implant screws.

Applicants' invention is directed to prosthesis fabrication step of the procedure. The cylinders of applicants' instant invention are placed into the extension elements (more commonly known as abutments) on the working model and the prosthesis is built upon the cylinders. The cylinders of the instant application support the actual prosthesis that is to be placed in the mouth and affixed to the implant screws. These components are completely different from those described in Carlson '841, which are used to make the impression which leads to the fabrication of the working plaster model and which have nothing to do with the prosthesis that attaches to the implant screws. It should be clarified that "cylinder" (as described by the Examiner) used with impression material in Carlsson '841 is not used to build a framework, as suggested by the Examiner, but is used to make the working model. The "cylinder" in Carlsson '841 is not the same thing as the cylinder in the instant application. They are not interchangeable and are used for completely different purposes. After the prosthesis is finished, the cylinders, with the prosthesis built thereon, are removed from the spacer elements and are attached to the implant screws located in the jawbone.

With respect to fiber reinforced impression material, it would not have been obvious to use fiber reinforced impression material with the cylinders to increase the strength of the impression material in the Carlsson '841 reference, as suggested by the Examiner. The Examiner has provided no evidence of motivation to use fiber reinforced impression material. In fact, it would not have been obvious to do so, since impression material is not used as a structural support nor as a structural component, but is used merely as a negative reproduction from which a mold is formed. The impression is not placed back in the mouth and is not used as a restorative material and therefore, is not exposed to continuous force or pressure as is a dental appliance or restorative material. In fact, the use of fiber reinforcement in impressions would likely decrease the surface detail and precision of the material. As stated above, the cylinders of applicants' invention are not used in impression material, nor for the fabrication of a working model, but are used as an integral component of the actual implant prosthesis. There is no

suggestion, showing or motivation in Carlsson '841, teaching applicants' invention and notice to this effect is respectfully requested. The claims are not anticipated or rendered obvious by Carlsson '841.

Branemark '654 is more similar to Carlsson '841 than to applicants' invention. Branemark '654 is concerned with the manufacture of a positive model that is then used to manufacture the dental prosthesis which is then affixed to the implant screws located in the jawbone. Branemark '654 discloses the use of dummies 2, guide pins 19 and guiding elements 9, none of which will be part of the final prosthesis to be affixed to the implant screws. The guiding elements and guide pins are placed into the distance means 22 which are attached to the jawbone of the patient's mouth. A tray filled with impression material is then placed in the patient's mouth over the guiding elements and guide pins. After the impression material hardens, it is removed from the mouth along with the guiding elements and pins. Dummies 2 are then attached to each guide element by the pin. This negative impression is then filled with casting material. After it hardens, the guide pins and guiding elements are removed. The dummies remain in the plaster model and are then used to provide the spacing for the components upon which the prosthesis to be fabricated thereon. At this point of the fabrication process, the cylinders of applicants' invention would be inserted into the dummies and a structural framework material, composite material, or ceramic material would be "built on" or applied to the cylinders in the fabrication of the prosthesis. After the prosthesis is prepared, the cylinders with the prosthesis thereon, are removed from the dummies and affixed to the implant screws in the patient's mouth. Similar to the Carlsson '841 reference, Branemark '654 is directed to components which are completely different and used for a completely different function than the cylinders of the instant application. The claims are not anticipated by the Branemark '654 reference.

Accordingly, it is believed that claims 1 – 32 and 43 – 48 specify patentable subject matter and are now in condition for allowance. Applicants therefore respectfully request favorable reconsideration and allowance of this application. The Examiner is requested to telephone Applicants' attorney at the number listed below if it will advance the prosecution of this case. If necessary, the Examiner is authorized to charge further fees necessary to advance the prosecution in this case from Deposit Account No. 500718.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

Claims 1, 12, and 43 – 46 have been amended as follows:

1(amended). A cylinder designed to retain a structural framework material, composite material, or ceramic material for an implant system comprising:

a substantially cylindrical body; and

one or more shelves disposed on a surface of the substantially cylindrical body.

12(amended). An implant system comprising:

one or more cylinders designed to retain a structural framework material, composite material, or ceramic material, comprising a substantially cylindrical body and one or more shelves disposed on a surface of the substantially cylindrical body.

19(amended). The cylinder of claim 1 fabricated of a material selected from metal, plastic, ceramic, polymeric material, and mixtures thereof.

43(amended). A cylinder designed to retain a structural framework material, composite material, or ceramic material for an implant system comprising:

a substantially cylindrical body;

one or more shelves disposed on a surface of the substantially cylindrical body;

and

a cantilever extending from the cylindrical body.

44(amended). A cylinder designed to retain a structural framework material, composite material, or ceramic material for an implant system comprising:

a substantially cylindrical body;

one or more shelves disposed on a surface of the substantially cylindrical body;

and

a series of nodules, holes or beads disposed on a surface of the cylindrical body.

45(amended). A kit for an implant system comprising:

one or more cylinders designed to retain a structural framework material, composite material, or ceramic material, wherein the cylinders comprise a substantially cylindrical body; and one or more shelves disposed on a surface of the substantially cylindrical body.

46(amended). A kit for an implant system comprising:

composite material; and

one or more cylinders designed to retain a structural framework material, composite material, or ceramic material, wherein the cylinders comprise a substantially cylindrical body; and one or more shelves disposed on a surface of the substantially cylindrical body.